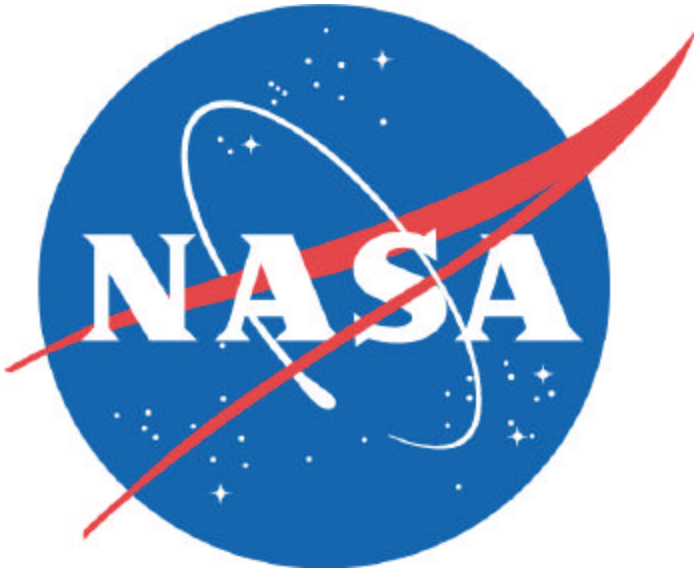

HEADQUARTERS QUALITY SYSTEM MANUAL

DOCUMENT HISTORY LOG

Status (Draft/ Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
BASELINE		January 15, 1999	
Revision	A	April 28, 1999	Revisions resulted from DNV Preregistration Audit nonconfromances and ISO Project Office comments to improve the clarity, readability, and instructions of the document. The changes do not materially impact the intent or usage of this HQSM. For details, please see "HQSM1200-, Headquarters Quality System Manual Comment Disposition Marcie Swilley – 4/19/99".
Revision	B	December 29, 1999	Expansion of Headquarters scope to include all Functional Offices processes. Additional application of 4.6, Purchasing requirement. For details see "HQSM1200--, Headquarters Quality System Manual Comment Disposition Marcie Swilley – 12/29/1999".
Revision	C	September 5, 2000	Revision resulted from DNV scope expansion audit nonconformance for clarification in the application of quality records in the HQ system. Several quality record tables have been added throughout the document which provide specific direction for required quality records. Also revisions to HCP 1400-2 resulted in Appendices A & C being incorporated into paragraphs 2.0 and 4.6, respectively. Finally paragraphs 4.10, 4.12, and 4.13 were revised to reflect the scope expansion and the applicability of these elements to the NASA Arts and Exhibits Programs.

Headquarters Quality System Manual

APPROVAL

/s/

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Daniel R. Mulville, Associate Deputy Administrator

Prepared by

/s/

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Michael Mann, Executive Management Representative

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PREFACE

The NASA Headquarters (HQ) Quality System enables the achievement of the HQ quality policy: to consistently deliver the cutting-edge, quality products and services required by our customers. The Quality System shall be in conformance with the International Organization for Standardization's 9001 (also referred to as ISO 9001) requirements for quality systems. This Quality System Manual (QSM) defines the quality system. HQ includes the leadership for four Strategic Enterprises and Agency-level functional management. HQ is responsible for determining NASA's strategy relative to programs and activities that implement NASA's mission, goals, and objectives to serve its customers. The Quality System implements the *NASA Strategic Plan, Strategic Management Handbook (SMHB),* the *NASA Performance Plan,* and *Program/Project Management* which form the basis for the ways HQ conducts business.

This QSM applies to all NASA HQ organizations in an effort to fully implement and integrate NASA's Agency, Strategic Enterprise, and HQ management direction in conformance with ISO 9001 requirements. The focus of the QSM covers all HQ Agency-level, Strategic Enterprise, and operational processes which directly affect the quality of their products

The QSM is not intended to duplicate or contradict any other policy, procedure, or guideline. As such, the QSM will reference prevailing documents in which a topic is addressed and existing coverage is deemed adequate. Information provided within is intended to be supplemental.

The HQ Executive Management Representative is responsible for maintenance of this QSM. The controlled version of the manual is available on the world wide web via the HQ ISO 9001 Document Library for the Quality System at *http://hqiso9000.hq.nasa.gov.* By definition, any printed version of this QSM is uncontrolled. Revisions to this manual shall be made as the HQ Quality System matures. Any proposed revision to this manual is to be submitted to the Associate Deputy Administrator who authorizes approval of the revision after an internal review initiated by the Executive Management Representative. (See paragraph 4.5.)

TABLE OF CONTENTS

1.0 SCOPE

The Headquarters QSM applies to all HQ organizations. Specifically, it applies to the Agency, Strategic Enterprise, and HQ management of NASA's Scientific Research, Space Exploration, and Technology Development and Transfer missions.

This QSM is designed to provide information for the organizational structure, responsibilities, procedures, processes, and resources for implementing the Strategic Management Process at NASA HQ in conformance with NASA Policy Directive (NPD) 8730.3, *NASA Quality Management System Policy (ISO 9000)* and *American National Standards Institute Quality Systems-Model for Quality Assurance in Design, Development, Production, Installation, and Servicing* (ANSI/ASQC Q9001-1994), herein referred to as ISO 9001. It is organized to parallel applicable sections of ISO 9001. The QSM is intended to be a "what" document, not a "how to," addressing the overall policy and referencing other documents that provide implementing guidance. Headquarters Common Processes (HCP) and Office Work Instructions (OWI) will constitute the mechanism describing "how" work is performed at HQ (see paragraph 3.4 and 3.5).

2.0 REFERENCES, DEFINITIONS and ACRONYMS

2.1 References

The following documents contain provisions that, through reference in this QSM or in policy or procedure documents, constitute the basis for the QSM:

NPD 1000.1	*NASA Strategic Plan*
NPG 1000.2	*NASA Strategic Management Handbook (SMHB)*
NPG 1000.3	*The NASA Organization*
NPD 7120.4	*Program/Project Management*
NPG 7120.5	*NASA Program and Project Management Processes and Requirements*
	Annual *NASA Performance Plan*
	Each Enterprise's *Enterprise Strategic Plan*
	Each Functional Office's *Functional Leadership Plan*
ANSI/ ASQC	*American National Standards Institute,*
Q9001-1994	*Quality Systems-Model for Quality Assurance in Design, Development, Production, Installation, and Servicing*
ANSI/ASQC8402:1994	*Quality Management and Quality Assurance - Vocabulary*
NPD 8730.3	*NASA Quality Management System Policy (ISO 9000)*
NPG 1441.1	*Records Retention Schedules*
HQPC 1150.1	*Headquarters Quality Council*
HCP1400-1	*Document and Data Control*
HCP1280-2	*Corrective and Preventive Action*
HCP1280-3	*Internal Quality Audits*
HCP3410-4	*Employee Training*

2.2 Definitions

In general the definitions, given in ANSI/ASQC 8402:1994 apply. However, the following definitions are offered to assist the user in understanding the application of the Strategic Management Process, as well as the ANSI/ASQC Q9001-1994 quality standard and the quality policies in this QSM:

Term	Definition
Agency Crosscutting Processes	The key processes identified at the Agency level that HQ use to deliver products and services to customers.
ISO	The recognized short name for the International Organization for Standardization, an international agency consisting of member countries that each has one "equal" vote. The U.S. representative is the American National Standards Institute.
Key Process	A process that has a DIRECT impact on the quality of a product or service being provided by NASA HQ.
Process	Set of interrelated resources and activities that transform inputs into outputs. Resources may include personnel, finance, facilities, equipment, techniques, and methods.

Term	Definition
Product	That which is the result of activities or processes.
Quality System	A management tool that ensures that products and services conform to specified requirements.
Service	The results generated by activities at the interface between the NASA HQ and the customer and by NASA HQ internal activities to meet customer needs.
Strategic Management Process	The basis for NASA to manage its affairs effectively and efficiently.

2.3 Acronyms

Acronym	Description
ANSI	American National Standards Institute
ASQ	American Society for Quality
GPRA	Government Performance & Results Act
GSFC	Goddard Space Flight Center
HCP	Headquarters Common Process
HQPC	Headquarters Policy Charter
HQPD	Headquarters Policy Directive
HQPG	Headquarters Procedures and Guidelines
ISO	International Organization for Standardization
MOU	Memorandum of Understanding
NHB	NASA Handbook
NPD	NASA Policy Directive
NPG	NASA Procedures and Guidelines
OHR	Office of Human Resources
OJT	On-the-job training
OPR	Office of primary responsibility
OWI	Office Work Instruction
QS	Quality System
QSM	Quality System Manual
SMHB	Strategic Management Handbook

3.0 HEADQUARTERS STRATEGIC MANAGEMENT PROCESS IMPLEMENTATION REQUIREMENTS

NASA established a Strategic Management Process that provides for the fulfillment of customer-focused strategic plans that align Agency activities with its mission and concrete goals. The *NASA Strategic Management Handbook (SMHB)*, NPG 1000.2, defines the management system, including the roles and relationships at HQ. NASA HQ executes its mission and achieves its goals through Strategic Enterprises and Functional Offices that provide Agency-wide leadership.

NASA established its Strategic Management Process consistent with the Government Performance and Results Act (GPRA) of 1993. This act was enacted to improve Government performance by requiring Federal agencies to implement long-term strategic planning activities, to effectively measure program outcomes, and to systematically hold the agencies accountable for achieving program results. GPRA requires NASA to develop and update a 5-year strategic plan, prepare annual performance plans, and submit annual performance reports. GPRA obligates NASA to clearly ascertain and articulate its mission, long- and short-term goals and objectives, and the metrics to measure performance. The net result of these efforts is the publication of the *NASA Strategic Plan* and the annual *NASA Performance Plan*.

The *NASA Strategic Plan* details the Agency's mission, goals, and objectives, as well as the mission, goals, and objectives of each Enterprise. The *NASA Performance Plan* outlines selected measurements to evaluate progress that the Agency intends to make in a given fiscal year toward the achievement of its goals. The *SMHB* details the Agencywide roles and responsibilities and requirements for NASA's Strategic Management Process. The SMHB establishes the following:

- A strategic management framework;
- A strategic management process;
- Roles, responsibilities, and an Agencywide strategic management organizational structure which--
    - * describes the Administrator's councils,
    - * clarifies management roles within the Strategic Enterprises,
    - * identifies NASA-wide crosscutting process management role,
    - * defines the roles of Centers and Center Directors, and
    - * defines the roles of HQ Functional Offices;
- Requirements for NASA as a whole and the individual Strategic Enterprises to develop and maintain strategic plans, and perform capital investment planning;

- An implementation planning process; and
- Ties for relating the strategic management process to performance evaluations at all levels.

The following paragraphs detail the Strategic Management Process and its meaning to the HQ Strategic Enterprises and Functional Offices from a daily standpoint:

- roles and responsibilities,
- key products and services,
- the HQ Quality System, and
- common and organizationally unique processes which directly affect the quality of HQ products and services.

3.1 Headquarters Roles and Responsibilities

The NASA Organization handbook (NPG 1000.3) provides the mission statements and sets forth the approved organizational charts for all Officials-in-Charge of HQ Offices. HQ roles and responsibilities are focused in three main areas: Agency management, Enterprise management, and HQ operations. Both Agency and Enterprise management, on a NASA-wide level, are defined in the *SMHB*. HQ roles and responsibilities are performed by Strategic Enterprise and Functional Office organizations.

3.1.1 Agency Management

The HQ part of Agency management is primarily the responsibility of the Functional Offices which includes the Administrator's senior staff. The Administrator's senior staff, including the Associate Deputy Administrator, Chief Engineer, Chief Information Officer, Chief Scientist, Chief Technologist (located in the Aerospace Technology Enterprise) and Chief Health and Medical Officer is responsible for providing the Agency's overall strategic direction and policies while establishing the relative priorities, associated budget guidelines, and performance assessments. A series of councils and boards, chaired by HQ senior officials, are also employed to ensure the integration and coordination of decision-making in cross-organizational matters.

The Functional Offices establish and disseminate policy, leadership plans, and standards within their functional areas, as well as assessments of performance against those standards. They also serve as staff to the Administrator, and provide central services across the Agency. Memoranda of agreement may be utilized for a Functional Office to provide products and services to Strategic Enterprises, Centers, and other Functional Offices. The Functional Offices are the Office of the Chief Financial Officer, HQ Operations, Equal Opportunity Programs, Human Resources and Education,

General Counsel, Procurement, External Relations, Management Systems, Small and Disadvantaged Business Utilization, Legislative Affairs, Public Affairs, Safety and Mission Assurance, and Policy and Plans.

Roles of the HQ part of Agency management are detailed in the *SMHB*.

3.1.2 Strategic Enterprise Management

Agency programs and projects are defined and managed by the centers of the four Strategic Enterprises and their HQ offices:

- Space Science (Office of Space Science),
- Earth Science (Office of Earth Science),
- Human Exploration and Development of Space (Office of Space Flight and Office of Life and Microgravity Sciences and Applications), and
- Aerospace Technology (Office of Aerospace Technology).

The HQ part of Enterprise management is a subset of managing an entire Strategic Enterprise. The HQ portion of the Enterprises is responsible for providing leadership for the entire Strategic Enterprise and for establishing Enterprise strategy and cross-program priorities. The focus is primarily on external customers. A process is established for gathering customer requirements, determining the strategic direction for the Enterprise, defining Enterprise programs, and assessing satisfaction levels while providing advocacy for the entire Strategic Enterprise. Roles of the HQ part of the Enterprises are detailed in the *SMHB*.

3.1.3 Headquarters Management

All HQ organizations are involved in overall management of the activities at HQ. Specifically, the manner and procedures for providing the key products and services to which they are assigned. As outlined in Chapter 3 of *The NASA Organization*, Officials-in-Charge of HQ offices provide executive leadership and direction for all activities of their offices.

3.2 Headquarters Key Products and Services

NASA HQ has ultimate responsibility for designing the Nation's civil aeronautics and space program. To accomplish this effort, HQ organizations make a variety of significant decisions in their respective areas of responsibility on a daily basis, which affect NASA-wide endeavors, as well as those of their customers and other stakeholders. These decisions are primarily related to the following:

- Mid- and long-term strategies for implementing NASA's vision, mission, goals, and objectives in conjunction with the requirements of its customers and other stakeholders and funding made available through the appropriation process.

- Policies, procedures, and guidelines which govern Agencywide delivery of technical and functional products and services.
- Issues affecting the management of NASA.
- NASA programs, i.e., initiating new programs and continuing, modifying, or terminating existing programs.
- NASA's pursuit of science and technology.
- Long-term capital investments.
- Issues affecting NASA's interests in science, technology, engineering management, health and safety, space operations, information technology, and financial management.
- Issues affecting key functional areas of interest primarily internal to NASA (but also of interest periodically to its customers and other stakeholders).
- Issues affecting key activities within NASA's Centers.

The decisions made at HQ are documented and distributed in various media. Examples include, but are not limited to the following:

- NASA's Strategic Plan, Enterprise Strategic Plans, and Functional Office Leadership Plans.
- Agencywide direction approved as NASA Policy Directive (NPD), NASA Procedures and Guidelines (NPG), and HQ-specific direction, e.g., HQPD's and HQPG's, respectively.
- Direction provided through the Senior Management Council, Program Management Council, and Capital Investment Council, as well as other advisory councils of the Administrator.
- Direction provided by individual HQ offices within the authority and responsibility of the individual organizations as stated in controlling documents.

HQ also provides advocacy, education, public outreach, and collaboration related to NASA-wide endeavors in scientific research, space exploration, and technology development and transfer. Advocacy focuses on advancing existing NASA activities and developing support for new NASA initiatives. Education focuses on transferring knowledge of NASA's accomplishments and endeavors to educational organizations. Public outreach focuses on demonstrating the usefulness of NASA's endeavors to the public at large. Collaboration focuses on working with other national and international organizations to leverage NASA's investments and resulting contributions.

3.3 The Headquarters Quality System

High quality, cutting-edge products and services (both internal and external) to achieve the strategic plans are delivered through the implementation of effective, consistent, and repeatable processes. Agency policy and ISO 9001 quality system requirements guide these processes. The NASA HQ Quality System is a process-based management system designed to control the quality of HQ key products and services. However, the Quality System is based on several inputs because it references and takes into consideration many other requirements. These inputs form the basis of the HQ Quality System requirements addressed in paragraph 4.0 below. Figure 1 depicts the relationship of the inputs and outputs of the HQ Quality System.

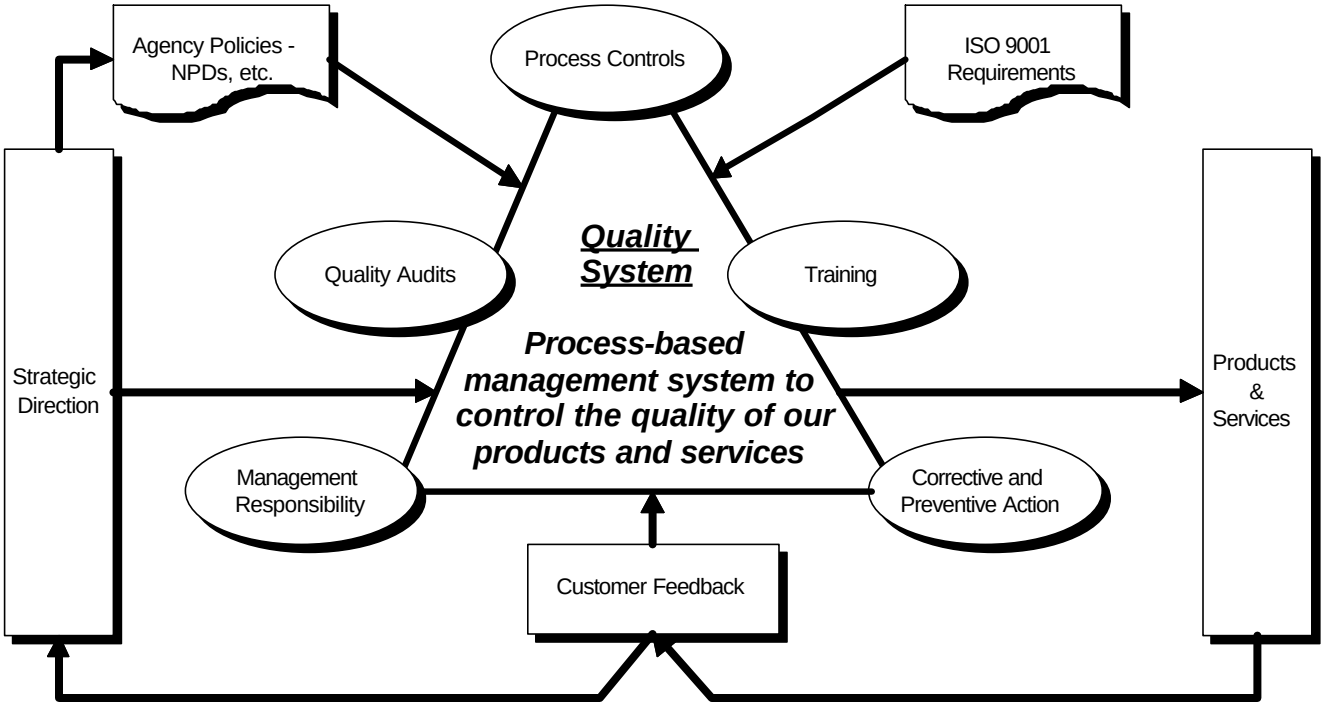


Figure 1. The NASA Headquarters Quality System

Initially, the system relies on the strategic direction of the agency as defined in the *NASA Strategic Plan* and the *Strategic Management Handbook*. Subsequently, the quality system operates within the constraints defined by Agency policy. These policies are reflected in NPD's, and NPG's which can be found on-line through the NASA On-line Directives Information System (NODIS) at http://nodis.hq.nas.gov/. Lastly, the system was established in conformance with the internationally recognized ISO 9001 standard for Quality Systems. In order to be in conformance with ISO 9001, the HQ Quality System must:

- take into consideration the 20 elements of the ISO 9001 standard where applicable

- apply the 20 elements in a manner which makes sense, adds value, and promotes organizational effectiveness and efficiency.

As we noted above, the system was designed to conform to the requirements of ISO 9001. Of the 20 ISO 9001 elements, five are the primary thrust of the HQ Quality System. Namely:

- 4.1, Management Responsibility
- 4.9, Process Control
- 4.14, Corrective and Preventive Action
- 4.17, Internal Quality Audits, and
- 4.18, Training

These are the primary elements, which determine the success of any process-based quality system. Collectively they ensure a system that is understandable, effective in producing the high quality products, and changeable based on the actual performance of the system. In addition, the other 15 elements of the ISO 9001 standard are a variation of element 4.9, Process Control. For example, 4.3, Contract Review, outlines the requirements for clearly understanding incoming requirements. 4.4, Design Control, outlines the requirements to ensure that the product design meets those requirements. Since ISO 9001 is a process-based management system, it is important to have appropriate control over the various processes that produce the products and services required by NASA HQ customers. This is why many of the elements address controlling specific elements of an overall business process; thus “Process Control” appears at the apex of the triangle.

Within the Quality System there is a document hierarchy. The HQ Quality System Document Hierarchy is explained in paragraph 4.2.1. There are two distinct types of processes in the HQ Quality System: HQ Common Processes and Office Work Instructions. Each type is described below.

3.4 Headquarters Common Processes (HCP)

HCP’s are processes performed by more than one HQ organization. They were developed to meet the need for consistency and repeatability across HQ. Quality System HCP’s shall be established to ensure that processes for delivering HQ products and services are of the highest quality through conformance with the requirements of the ISO 9001 Quality System standard. Quality System HCP’s include the following:

- Document and Data Control – HCP1400-1,
- Corrective and Preventive Action – HCP1280-2,
- Internal Quality Audits – HCP1280-3,

- Employee Training – HCP3410-4.

The current version of Quality System HCP's can be accessed on the HQ electronic document management system at http://hqiso9000.hq.nasa.gov/dms.htm (internal) or http://www.hq.nasa.gov/hqiso9000/library.htm (external). In addition, the HQ policy regarding Quality System HCP's, as well as other requirements of the HQ Quality System, are addressed in paragraph 4.0 below.

3.5 Office Work Instructions (OWI)

HQ OWI's document processes that are unique to an individual organization. OWI's shall be performed to ensure process consistency and repeatability. The documented processes shall be reviewed periodically to ensure that the products and services they produce are of the highest quality. All OWI's shall be compliant with Quality System HCP's. The current version of OWI's can be accessed from the HQ electronic document management system at http://hqiso9000.hq.nasa.gov/dms.htm (internal) or http://www.hq.nasa.gov/hqiso9000/library.htm (external).

4.0 QUALITY SYSTEM REQUIREMENTS

A quality system intended to conform to the internationally recognized ISO 9001 standard has been implemented at NASA HQ. The ISO 9001 standard contains 20 elements that form the basis of the HQ Quality System. HQ policy regarding these 20 elements is addressed below.

4.1 Establish Quality System Framework

This paragraph documents conformance to the ISO 9001, 4.1, Management Responsibility, quality system element.

4.1.1 Quality Policy

NASA Headquarters quality policy is
"to consistently deliver the cutting-edge, quality products and services required by our customers."

Figure 2. Headquarters Quality Policy

Each HQ manager shall be responsible for ensuring that the quality policy highlighted in Figure 2 is understood, implemented, and maintained at all levels of the organization.

This quality policy will be communicated throughout the organization via orientation, communication media, employee training, and quality reviews with management.

Objectives to meet the HQ quality policy shall be determined by measuring the health of the Quality System. This shall be accomplished by evaluating the results of the internal quality audits (refer to HCP1280-3, Internal Quality Audits), results of actions assigned by the Quality Council (refer to HQPC 1150.1, HQ Quality Council) and other metrics identified by the Quality Council which assess the health of the Quality System.

4.1.2 Organization

4.1.2.1 Responsibility and Authority

The Associate Deputy Administrator is the Official-in-Charge of the HQ Quality System. While the Associate Deputy Administrator has the ultimate authority and responsibility for establishing and maintaining the Quality System, the Executive Management Representative has the day-to-day authority and responsibility for implementation. All employees shall be responsible for understanding and complying with the HQ Quality System and policy. Officials-in-Charge of HQ offices may delegate authority for the quality system, but they will maintain the responsibility. Figure 3 depicts the organizational relationships at HQ.

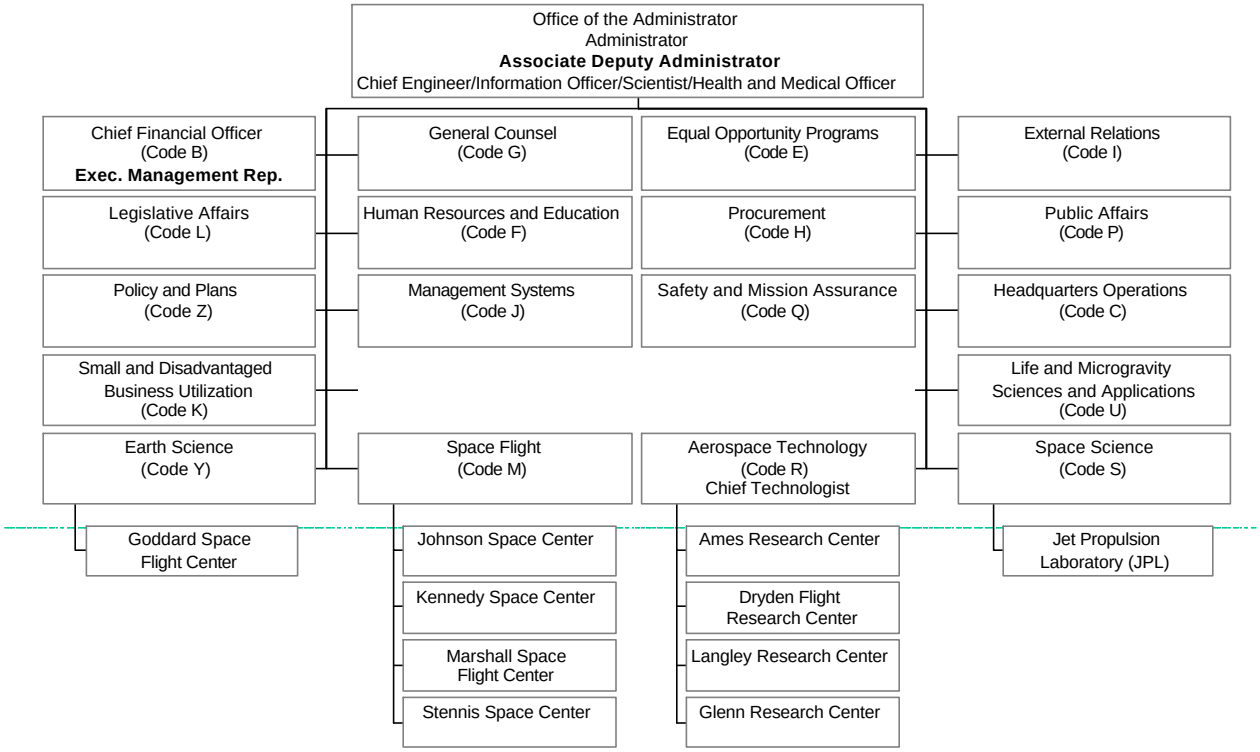


Figure 3. NASA Headquarters Organization Chart

Employee performance planning is the process by which employee performance elements are defined and assigned. Individual position descriptions document the responsibilities and authority of all personnel whose work affects product quality. Organizational charters are documented in *The NASA Organization* (NPG 1000.3).

4.1.2.2 Resources

The Associate Deputy Administrator shall be responsible for providing sufficient resources, including trained personnel (see paragraph 4.18); for management work performance; and for verification activities, including internal quality system auditing (see *Headquarters Quality Council,* HQPC 1150.1).

4.1.2.3 Official-in-Charge and Executive Management Representative

The NASA Associate Deputy Administrator is the Official-in-Charge with the authority to develop, implement, and maintain the HQ Quality System, ensuring conformance with the requirements of the ISO 9001 standard.

The NASA Associate Deputy Administrator has appointed an Executive Management Representative, who is currently in the Office of the Chief Financial Officer. The Executive Management Representative ensures that a Quality System is established,

implemented, and maintained in accordance with ISO 9001, reports on the Quality System performance, and recommends improvement to the Associate Deputy Administrator at Quality Council meetings (see paragraph 4.1.3).

The Executive Management Representative delegated to the Director of the ISO 9001 Project Office the organizational authority to:

- initiate action to identify and prevent Quality System problems;
- initiate, recommend, or suggest solutions through organizational functions;
- verify the implementation of these solutions;
- control further processing and delivery of nonconforming products until the deficiency or unsatisfactory condition is corrected; and
- record any problems relating to the product, process, and Quality System.

The ISO 9001 Project Office leads internal quality audits to ensure continuing conformance with the Quality System and establishes resource requirements for audits. The audit findings shall be given to the management personnel responsible for the area being audited. The responsible manager shall determine a corrective action implementation date.

4.1.3 Management Review

Management reviews of the HQ Quality System shall be conducted at Quality Council meetings as detailed in *Headquarters Quality Council* (HQPC 1150.1) policy charter. Records of the Quality Council meetings shall, at a minimum, meet the requirements provided in Table 1.

Table 1. Management Review Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Quality Council Record(s) of Decisions and Actions (4.1) • *Evidence of decisions and actions that document reviews of the Headquarters Quality System held during Quality Council meetings (Detailed in Headquarters Quality Council policy charter [HQPC 1150.1] and OWI1150-AI003, Management of Quality Council Meetings)*	• *Office of the Associate Deputy Administrator (Code AI)*	• *ISO 9001 Project Office*

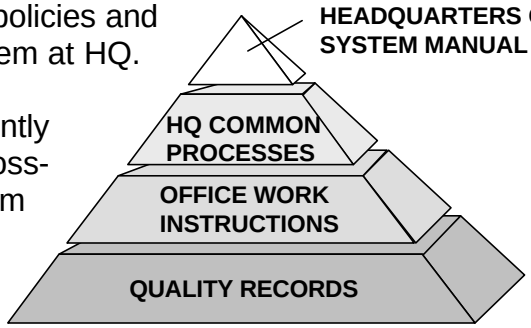
4.2 Define Headquarters Quality System

This paragraph documents conformance to the ISO 9001, 4.2, Quality System, quality system element.

4.2.1 General

A Quality System has been established, documented, and will be maintained at HQ as a means of ensuring that products and services conform to specified requirements. It is important to note that not all 20 ISO 9001 elements are applicable to HQ products and services. Where an element is not applicable, a brief explanation is provided. Additionally, appendix A maps the HQ Quality System against the ISO 9001 quality system elements. In order to minimize the documentation required to conform with the ISO 9001 standard, an HCP exists only where it was determined that a common process was needed to conform to the standard. However, to readily determine the ISO 9001 element applicability to each OWI, a matrix is provided in appendix B that lists each OWI by organization, and the QSM elements that apply.

The quality system documentation hierarchy is illustrated here and defined as follows:



Level 1. The HQ QSM states the quality policies and objectives and describes the Quality System at HQ. The HQ QSM incorporates quality system procedures that are less complex or currently defined in other NASA documents (via cross-referencing), and references quality system procedures that are more complex in HCP's. The QSM also outlines the structure of the documentation used in the Quality System.

Level 2. HCP's as described in paragraph 3.4.

Level 3. OWI's as described in paragraph 3.5 or other procedural documentation.

Level 4. Records of quality, including documents such as reports, files, data sheets, letters, and forms that provide objective evidence that quality requirements are documented and have been met and retained according to established procedures.

4.2.2 Quality System Procedures

HQ quality system procedures are provided in one of four ways as follows:

- Reference to existing NASA documents in which the existing procedure provides the necessary control as defined by the ISO 9001 standard;
- Reference to existing documents with supplementary procedures contained in either the QSM or a separate HCP in which existing procedures fall short of providing the necessary control as defined by the ISO 9001 standard;
- The QSM where no existing procedure exists, and the procedure is not complex; or

- An HCP or OWI where no existing procedure exists and the procedure is more complex.

In all cases, the QSM will either detail the quality system procedures or make reference to where applicable procedures can be found.

4.2.3 Quality Planning

Quality planning at HQ is performed in a manner consistent with all other requirements of the Quality System. Documentation and definition of how quality requirements are met shall be accomplished in several ways. Table 2 identifies the quality planning elements and the manner in which each is achieved in the Quality System.

Table 2. Quality Planning

Quality Planning Element	Reference
Preparation of quality plans (ISO 9001, 4.2.3.a)	- *NASA SMHB* (NPG 1000.2) - *NASA Strategic Plan* (NPD 1000.1) - *Enterprise Strategic Plans* - *Functional Leadership Plans* - Annual *NASA Performance Plan* - *Program/Project Management* (NPD 7120.4) - *NASA Program and Project Management Processes and Requirements* (NPG 7120.5)
Identification and acquisition of controls, processes, resources and skills (ISO 9001, 4.2.3.b)	- *QSM* Understanding Incoming Requirements (QSM paragraph 4.3)
Ensuring compatibility of design, process, and documentation (ISO 9001, 4.2.3.c)	- *QSM* Control Product Design (QSM paragraph 4.4)
Updating quality control, inspection, and testing techniques (ISO 9001, 4.2.3.d)	Not Applicable to HQ Quality System
Identification of measurement requirement (ISO 9001, 4.2.3.e)	Not Applicable to HQ Quality System
Identification of suitable verification at appropriate stages (ISO 9001, 4.2.3.f)	- *QSM* Control Processes (QSM paragraph 4.9)
Identification of acceptance criteria (ISO 9001, 4.2.3.g)	- *QSM* Control Product Design (QSM paragraph 4.4.5)
Identification and preparation of quality records (ISO 9001, 4.2.3.h)	- *QSM* Control Quality Records (QSM paragraph 4.16)

The *NASA SMHB* lays the groundwork for NASA's Strategic Management Process. It provides NASA employees with policy and guidance for integrating quality planning at all levels of NASA into their long-term planning efforts. The *NASA Strategic Plan* defines NASA's overall vision, mission, goals, and objectives and provides a top-level strategy and roadmap for future accomplishments. It also provides overarching goals and objectives for NASA's Strategic Enterprises. The *Enterprise Strategic Plans* and the *Functional Leadership Plans* flow from and amplify the Agency level strategic plan. The *NASA Performance Plan*, submitted annually, defines performance goals and

describes the performance measures and service levels for activities conducted to implement the strategic plans.

Quality planning from a top-level perspective encompasses strategic planning and implementation planning. The *Enterprise Strategic Plans* and the *Functional Leadership Plans* expand on the *NASA Strategic Plan* by providing detailed quality planning guidance for each Strategic Enterprise and Functional Office, respectively. NPD 7120.4 and NPG 7120.5 govern quality planning, from a program/project standpoint.

4.3 Understand Incoming Requirements

This paragraph documents conformance to the ISO 9001, 4.3, Contract Review, quality system element.

NASA's operational authority comes from the National Aeronautics and Space Act of 1958 (Public Law), congressional authorization, appropriation laws, and supporting language. In essence, our mission is established and these laws define specific requirements. Contract review applies to HQ in the following two ways:

- Accepted work requirements implemented through congressional authorization and appropriation laws, and any clarifying documentation; and
- Accepted reimbursable work requirements accepted through authority provided under Section 203(c)(3) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473).

HQ organizations shall ensure through their budget processes that--

- Work requirements are understood prior to acceptance;
- Any differences between HQ and the party levying requirements are resolved prior to acceptance;
- The way requirements are amended and correctly transferred to the functional elements concerned are identified;
- The ability exists to meet the accepted requirements, both implied and explicit; and
- Records of the accepted requirements shall be maintained (see paragraph 4.16 and Table 3).

HQ organizations demonstrate understanding of incoming requirements through budget processes that are directly impacted by congressional authorization, appropriations laws, and reimbursable work requirements (see appendix B).

Table 3. Incoming Requirements Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Incoming Work Requirements (4.3) • *Contract reviews—evidence documenting: (1) accepted work requirements or (2) accepted reimbursable work* • *Accepted work requirements—implemented through: (1) congressional authorization, (2) appropriations laws, (3) any clarifying documentation* • *Accepted reimbursable work requirements—accepted under authority of 42 U.S.C. 2473 (National Aeronautics and Space Act)*	• *Office of the Chief Financial Officer (Code B)* • *Headquarters Strategic Enterprises holding NASA Form 506 Resource Authority* • *Headquarters Offices including NASA Management Office (Code SJ) with Financial Transaction Reports authority from Headquarters Business and Administrative Services Division (Code CFB)*	• *Office of the Chief Financial Officer (Code B)* • *Headquarters Strategic Enterprises holding NASA Form 506 Resource Authority* • *Headquarters Offices including NASA Management Office (Code SJ) with Financial Transaction Reports authority from Headquarters Business and Administrative Services Division (Code CFB)*

4.4 Control Product Design

This paragraph documents conformance to the ISO 9001, 4.4, Design Control, quality system element.

4.4.1 General

NASA HQ has ultimate responsibility for designing the Nation's civil aeronautics and space program through its strategic planning process (see paragraph 3.2). HQ products are designed as specified in applicable OWI's (see appendix B). Designs shall ensure that products meet specified requirements. Specified requirements include incoming work requirements as defined in paragraph 4.3 and other relevant inputs specified in the Quality System documentation. OWI's shall document the procedures and control mechanisms implemented for the design of specific products in conformance with paragraphs 4.4.2 through 4.4.8.

4.4.2 Design and Development Planning

The planning process incorporates the records and inputs derived from incoming requirements (see paragraph 4.3) and the direction provided from quality planning (see paragraph 4.2.3) in the design and development of products. Documents referenced in the quality planning (see paragraph 4.2.3) and organizations' OWI's document the processes to be used during formulation.

4.4.3 Organizational and Technical Interfaces

Applicable OWI's define interfaces between groups performing design function required during product formulation. The OWI's identify the information that will be transmitted and regularly reviewed.

4.4.4 Design Input

Budget process OWI's identify incoming work requirements and limitations and define the resolution process of any ambiguous, incomplete, or conflicting requirements. Additional input factors to the design input phase shall be identified from individual codes' OWI's. Any changes agreed to shall be documented and approved in accordance with OWI guidance.

4.4.5 Design Output

Design output is typically represented in final draft output documents. The design output shall meet the design input requirements, contain or reference acceptance criteria, and identify critical design characteristics crucial to the product.

4.4.6 Design Review and Approval

Design reviews and approval processes shall be planned, conducted, and documented in accordance with OWI guidance. Design review participation shall include representatives of all appropriate functions concerned. Records of such reviews shall be maintained in accordance with OWI guidance. Design review is the mechanism to ensure that the product is verified, validated, and approved.

4.4.7 Design Verification

(See paragraph 4.4.6 Design Review)

4.4.8 Design Validation

(See paragraph 4.4.6 Design Review)

4.4.9 Design Changes

All changes and/or modifications to designs shall be identified, documented, reviewed, and approved prior to release in accordance with OWI guidance.

4.4.10 Design Quality Records

Design records shall be maintained which, at a minimum, meet the requirements provided in Table 4.

Table 4. Design Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Design Records (4.4) • *Design planning and organizational and technical interfaces—evidence of these activities are provided by the OWIs themselves* • *Design input—evidence that: (1) identifies incoming work requirements and limitations and (2) defines the resolution*	• *Headquarters Strategic Enterprises* • *Office of Policy and Plans (Code Z)* • *Any Headquarters Office invoking 4.4 against its OWI*	• *Headquarters Strategic Enterprises* • *Office of Plans and Policy (Code Z)* • *Any Headquarters Office invoking 4.4 against its OWI*

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
process of any ambiguous, incomplete, or conflicting requirements • *Design output—evidence documenting that design output: (1) meets design input requirements, (2) contains or references acceptance criteria, and (3) identifies critical design characteristics crucial to the product* • *Design review and approval—evidence documenting that the product has been verified, validated, and approved* • *Design verification—evidence documenting that design-stage outputs are verified to have met design-stage input requirements at appropriate stages of design* • *Design validation— evidence documenting that design-stage outputs are validated to have met design-stage input requirements at the final stage of design* • *Design changes—evidence that changes and/or modifications to designs have been identified, documented, reviewed, and approved prior to release in accordance with OWI guidance.*		

4.5 Control Documents and Data

This paragraph documents conformance to the ISO 9001, 4.5, Document and Data Control, quality system element.

4.5.1 General

Documented procedures have been established and shall be maintained at HQ to control all documents and data that are within the scope of HQ Quality System relating to the requirements of ISO 9001 including, to the extent applicable, documents of external origin such as standards. This includes the processes for preparing, reviewing, approving, releasing, distributing, changing, revising, tracking, maintaining, and canceling such documents as standards, handbooks, requirements documents, interface control documents, quality manuals and plans, procedures, forms, and instructions. HCP1400-1 addresses the HCP's, and OWI's. Each HQ organization is responsible for the establishment, maintenance, and control of organization-unique documents and data to include distribution of documents and data of external origin. The use of the words "shall" or "will" indicates mandatory requirements.

4.5.2 Document and Data Approval and Issue

The documents and data shall be reviewed and approved for adequacy and accuracy prior to issue to perform work by authorized management, or designee, after having received concurrence from technical authorities and employee representatives performing the tasks. Each organization maintains the documents and data, such as procedures, instructions, and forms, or identifies the repository location of the documents and data such that each employee who is performing the task can easily retrieve the applicable documents/data for use. These documents can be in the form of any type of media, such as hard copy or electronic. Electronic media is recommended

when available. The documents shall be controlled, using the document's title/subject, effective date, and the Office of Primary Responsibility's organizational code. A master list identifying the current revision status of documents shall be established for the QSM, HCP's, and OWI's by the Document Manager and be readily available to preclude the use of invalid and/or obsolete documents. This control shall ensure that--

- Pertinent issues of appropriate documents are available at all locations essential to the effective functioning of the Quality System.
- Invalid and/or obsolete documents are promptly removed from all points of issue or use, destroyed, or otherwise ensured against unintended use.
- Any previous/obsolete version of any documents within the HQ Master List system retained by the user (e.g., for limited applicability, for historical purposes, for reference) will be either marked or otherwise suitably identified.

4.5.3 Document and Data Changes

Changes, revisions, and cancellations to documents and data shall be reviewed and approved by the same HQ organizations that performed the original review and approval, unless designated otherwise. The designated HQ organizations performing review and approval shall have access to pertinent background information upon which to base their review and approval. Where practicable, a description of the change shall be identified in the document or in the appropriate attachments.

4.6 Purchase Products and Services

This paragraph documents conformance to the ISO 9001, 4.6, Purchasing, quality system element.

HQ organizations are responsible for ensuring purchased products or services conform to specified requirements through management processes. OWI's document the method for purchasing products and services in individual organizations. Many of the ISO 9001, 4.6 requirements do not apply to all HQ purchasing vehicles. the following paragraphs describes the different purchasing vehicles and the applicable ISO 9001, 4.6 requirements.

4.6.1 JPL Purchasing Requirements

The HQ Office of Space Science (Code S) directly purchases products and services as addressed in the ISO 9001 standard. Code S has established and maintains a multiyear contract for the operations of NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California. JPL is a Federally Funded Research and Development Center (FFRDC) managed under contract by the California Institute of Technology (Caltech). Table 5 defines the ISO 9001, 4.6 requirement and its applicability to the Caltech contract:

Table 5. Purchasing Requirements for JPL

ISO 9001, 4.6 Requirement	Applicability to Caltech Contract
4.6.1 Establish and maintain documented procedures	Defined in Code S OWI's
4.6.2.a Evaluate and select on the basis of their ability to meet requirements	As detailed in the solicitation evaluation factors or Justification for Other than Full and Open Competition (JOFOC)
4.6.2.b. Define the type and extent of control	Defined in contract
4.6.2.c. Establish and maintain quality records of acceptable subcontractors	As established in the selection statement, JOFOC, and/or award fee evaluations
4.6.3. Purchasing data	As specified in individual task orders
4.6.4 Verification of purchased products	Defined in individual task orders when required to show verification of purchased products by NASA or the customer

Applicable processes within the Office of Space Science, used to award the contract to manage JPL and evaluate Caltech performance, are identified in Appendix B.

4.6.2 Research Purchasing Requirements

HQ codes may also issue solicitations that identify areas of research interest. They solicit research, education grant proposals or investigative ideas that contribute to broad scientific and technical objectives. The HQ codes' pre-award activities are generally comprised of solicitation, evaluation and selection of proposals.

HQ produces three types of solicitations: NASA Research Announcements (NRAs), Cooperative Agreements Notices (CANs) and Announcements of Opportunity (AOs). The process of soliciting, evaluating and selecting proposals under these solicitation instruments varies somewhat and is governed by the applicable regulation as shown in Table 6 below. The post-selection activities (e.g., award, payment, administration, verification, etc.) associated with each type of solicitation instrument are performed by the awarding NASA Field Center. Requirements of paragraphs 4.6.2.b., 4.6.3, and 4.6.4.1 (if required) are performed by the awarding NASA Center. Paragraphs 4.6.2.c. and 4.6.4.2 do not apply.

Table 6. Purchasing Requirements for Research

ISO 9001, 4.6 Requirement	NASA Research Announcement (NRA)	Cooperative Agreement Notice (CAN)	Announcement of Opportunity (AO)
4.6.1 Establish and maintain documented procedures	Detailed in HQ Code OWI and NFS 1835	Detailed in HQ Code OWI and NPG 5800.1	Detailed in HQ Code OWI and NFS 1872
4.6.2.a Evaluate and select on the basis of their ability to meet requirements	Detailed in HQ Code OWI, NFS 1835, and the solicitation	Detailed in HQ Code OWI, NPG 5800.1, and the solicitation	Detailed in HQ Code OWI, NFS 1872, and the solicitation

Actual procurement of all other scientific research is provided by NASA's Centers in accordance with their documented procedures.

4.6.3 SBIR/STTR Purchasing Requirements

Although the overall management and execution of NASA's Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Program is the responsibility of the NASA centers, HQ Office of Aerospace Technology (Code R) has certain responsibilities that also fall within the purview of the ISO 9001, 4.6 requirements. Specifically Code R performs three functions: approves the SBIR/STTR acquisition plan, considers the evaluations of SBIR/STTR proposals and selects subcontractors as the Source Selection Official for the SBIR/STTR Program. Table 7 below contains the ISO 9001, 4.6 requirements applicable to Code R under the SBIR/STTR program. Subparagraphs not listed fall under the responsibilities of the executing NASA center.

Table 7. SBIR/STTR Purchasing Requirements Applicable to Code R

ISO 9001 4.6 Requirement	Code R Function	Relationship of Function to Requirement
4.6.2.a Evaluate and select on the basis of their ability to meet requirements	Consider the Evaluation of SBIR/STTR Proposals	The source selection official considers proposals based on stated solicitation criteria. The solicitation contains the requirements and criteria that demonstrate requirements are met.
4.6.2.a Evaluate and select on the basis of their ability to meet requirements	Select the SBIR/STTR Proposals for Award	The source selection official selects proposal based on demonstrated ability to meet requirements
4.6.2.b. Define the type and extent of control	Approve the SBIR/STTR Acquisition plan	Acquisition plan defines contract type and type and extent of control to be required

4.6.4 Other Purchasing Requirements

HQ organizations, which rely on the Goddard Space Flight Center (GSFC) in Greenbelt, Maryland, to procure all other products and services as a part of their process, maintain process control (see paragraph 4.9) through a series of agreements with GSFC. These agreements are documented in a Memorandum of Agreement (MOA) and two Service Level Agreements (SLA). The MOA details HQ functions transferred to GSFC. The two SLA's, one for procurement and one for grants, detail performance parameters to which both HQ and GSFC have agreed. Administration of the MOA and SLA's shall be maintained and records kept by the Office of HQ Operations (Code C).

4.6.5 Purchasing Quality Records

Purchasing records shall be maintained which, at a minimum, meet the requirements provided in Table 8.

Table 8. Purchasing Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Purchasing Records (4.6) • *MOA and SLAs –agreements maintained with Goddard Flight Space Center (GFSC) which address purchase of products and services* • *NRA, CAN, AO—procurement vehicles to solicit contracts for the purchase of products, services, or research. Table 6, Purchasing Requirements for Research, provides regulatory and policy citations addressing their use* • *Contractor/supplier evaluation records—evidence documenting that contractors/ suppliers have been evaluated as being qualified to address purchase of products or services* • *List of acceptable contractors/suppliers—evidence documenting that a list is maintained of qualified contractors/suppliers available and related to the purchase of products or services*	• *Office of Headquarters Operations (Code C) for MOA and SLAs* • *Any Headquarters Office specified in an HCP or OWI that: (1) selects contractors, suppliers, or grantees or (2) uses NRAs, CANs, or AOs to solicit contracts for products, services, or research* • *Office of Public Affairs (Code P) specified in OWI*	• • *Office of Headquarters Operations (Code C) for MOA and SLAs* • *Any Headquarters Office specified in an HCP or OWI that: (1) selects contractors or suppliers, or grantees or (2) uses NRAs, CANs, or AOs to solicit contracts for products services, or research* • *Office of Public Affairs (Code P) specified in OWIs*

4.7 Control Customer-Supplied Product

Customer-supplied products are not incorporated into the supplies at HQ. As such, the ISO 9001, 4.7, Control of Customer-Supplied Products, quality system element does not apply to the HQ Quality System.

4.8 Identify and Trace Products

HQ products are primarily represented in document format on a recurrent basis (see paragraph 3.2). Due to their nature, unique identifiers are automatically assigned to products reflecting their distinctiveness and schedule. These unique identifiers shall be ensured via the instructions provided in paragraph 4.9 of this manual. The ISO 9001, 4.8, Product Identification and Traceability, quality system element is not appropriate for the HQ Quality System.

4.9 Control Processes

This paragraph documents conformance to the ISO 9001, 4.9, Process Control, quality system element.

The management processes that directly affect quality at HQ have been identified and planned. The identification is documented in the QSM under paragraph 3.2, Key Products and Services, QSM paragraph 4.2.3, Quality Planning, and the HCP's.

4.9.1 Planning and Implementation

The planning and implementation of controlled conditions is ensured through the use of individual OWI's or other procedural documentation. These detailed documents are

located within an organization's documentation structure that provides the method for performing activities that directly affect product quality. Included in the OWI's are the references to any standards/codes, quality plans, and/or associated procedures (HCP's, NPD's, and NPG's) and the methods for monitoring and controlling process parameters. Included in the OWI's are the criteria for product workmanship, which is stipulated in a clear practical manner (e.g., flow charts, written standards, representative samples, or illustrations).

4.9.2 Personnel Requirements

Personnel qualification requirements are covered via position descriptions and shall be specified (see paragraph 4.18).

4.9.3 Records

All OWI's and HCP's identify the quality records that provide objective evidence demonstrating conformance to the specified requirements. The results of reviews and assessments (see paragraph 4.9.4) shall be documented and retained as quality records (see paragraph 4.16 and Table 9). Records shall also be maintained for qualified personnel, in accordance with HCP3410-4, Employee Training, referred to in paragraph 4.18.

Table 9. Process Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Process Records (4.9) • *Product identification and traceability—evidence documenting that: (1) processes exist to identify products individually or in batches and (2) materials/products are traced through the development / delivery process* • *Reviews, assessments, and approvals—evidence documenting that: (1) the activity or product has been reviewed and assessed to determine whether it conforms to prescribed requirements and (2) approval has been given that the activity or product does conform to those requirements* • *Review and disposition of nonconforming document—evidence documenting: (1) the nature of the nonconformance in the document, (2) how the nonconformance will be addressed, and (3) the document is marked as nonconforming (for example, "Obsolete Version, For Info Only")*	• *Any Headquarters Office*	• *Any Headquarters Office*

4.9.4 Reviews, Assessments and Approval

Because products developed at HQ are primarily documents (see paragraph 3.2), their conformance and adherence to prescribed requirements shall be determined via reviews and assessments as documented in applicable OWI's. These reviews and assessments serve as the mechanism to verify and validate that the products will meet

their intended purpose. Approval of products is given, following the review and assessment, and is documented according to the procedures of the applicable OWI.

4.10 Inspect and Test Products

This paragraph documents conformance to the ISO 9001, 4.10, Inspection and Testing quality system element.

4.10.1 NASA Arts and Exhibits Program Inspection and Testing

The HQ Office of Public Affairs (Code P) is the only organization within the scope of the HQ Quality System that inspects and tests products as addressed in the ISO 9001 standard. Code P manages the NASA Arts Program and the NASA Exhibits Program. As such, Code P inspects and tests various pieces of artwork, graphics, and exhibits developed by external contractors. Therefore, Code P shall establish and maintain OWI's documenting procedures for inspecting and testing their products to verify that all specified requirements are met. The applicability of this ISO 9001 standard is specifically indicated in Appendix B.

Individual OWI's document the process for verification of specified requirements through three possible types of inspection and testing: 1) receiving, 2) in-process, and 3) final. The OWI indicates the type of inspection and/or testing and the corresponding records are maintained that, at a minimum, meet the requirements provided in Table 10.

Table 10. Inspection and Testing Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Inspection and Test Records (4.10) • *Inspection, testing and receiving incoming products—evidence documenting that: (1) incoming materials are inspected and tested in accordance to product specifications before those materials are incorporated into the product and (2) incoming materials conform to the product specifications* • *Inspection and testing—evidence documenting that: (1) products have been inspected in-process at specific test points to minimize defects while the product is in development or final production and (2) full inspection and tests of the final product has been conducted before the product's final completion and delivery*	• *Office of Public Affairs (Code P) specified in OWIs*	• *Office of Public Affairs (Code P) specified in OWIs*

4.10.2 Other Inspection and Testing

Because key products developed at HQ are primarily represented in document format (see paragraph 3.2), they do not warrant standard inspection activities as defined by the ISO 9001, 4.10, Inspection and Testing, quality system element. Inspection and testing of these products shall be provided via the instructions in paragraph 4.9.4 of this manual.

4.11 Control Inspection, Measuring, and Test Equipment

Inspection, measuring, or test equipment in the production of products is not used at HQ. As such, the ISO 9001, 4.11, Inspection, Measuring and Test Equipment, quality system element does not apply to the HQ Quality System.

4.12 Status Product Inspection and Testing

This paragraph documents conformance to the ISO 9001, 4.12, Inspection and Test Status quality system element.

4.12.1 NASA Arts and Exhibits Program Inspection and Test Status

The HQ Office of Public Affairs (Code P) is the only organization within the scope of the HQ Quality System that maintains inspection and test status of their products as addressed in the ISO 9001 standard. Code P manages the NASA Arts Program and the NASA Exhibits Program. As such, Code P inspects and tests various pieces of artwork, graphics, and exhibits developed by external contractors. Therefore, Code P shall identify inspection and test status of their products by suitable means. This status will show whether the inspection and test indicate conformance or nonconformance of the product.

Individual Code P OWI's document how the status is maintained to ensure that only the products that have passed the required inspection and tests are used. The applicability of this ISO 9001 standard is specifically indicated in Appendix B. These OWI's indicate the corresponding records that are maintained that, at a minimum, meet the requirements provided in Table 11.

Table 11. Inspection and Test Status Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Product Inspection and Testing Status Records (4.12) • *Evidence documenting that: (1) materials and products are marked with their test status as they go through development and delivery, (2) products that fail to meet testing or inspection criteria are identified as unsatisfactory, (3) unsatisfactory products are identified as such throughout development and delivery process, and (4) unsatisfactory product is approved for use by the person authorized to issue such approval*	• *Office of Public Affairs (Code P) specified in OWIs*	• *Office of Public Affairs (Code P) specified in OWIs*

4.12.2 Other Inspection and Test Status

Because key products developed at HQ are primarily represented in document format (see paragraph 3.2), they do not warrant standard inspection activities as defined by the ISO 9001, 4.12, Inspection and Test Status, quality system element. Status of the products shall be provided via the instructions in paragraph 4.9.4 of this manual.

4.13 Control Nonconforming Product

4.13.1 NASA Arts and Exhibits Program Control of Nonconforming Products

The HQ Office of Public Affairs (Code P) is the only organization within the scope of the HQ Quality System that controls their nonconforming products as addressed in the ISO 9001 standard. Code P manages the NASA Arts Program and the NASA Exhibits Program. As such, Code P controls any nonconforming pieces of artwork, graphics, and exhibits developed by external contractors. This activity will show whether the inspection and test indicate conformance or nonconformance of the product.

Individual Code P OWI's document how the nonconforming products are controlled to ensure that they are not unintentionally used. The control shall provide for identification, documentation, evaluation, segregation, disposition of nonconforming products, and for notifications to all parties concerned. The responsibility for review and authority for the disposition of the nonconforming product shall be defined in the OWI. Procedures for review of the nonconforming product will be contained in the OWI or related documentation. The description of the nonconformity that has been accepted, and of remediations, shall be recorded to denote the actual condition.

The applicability of this ISO 9001 standard is specifically indicated in Appendix B. These OWI's indicate the corresponding records that are maintained that, at a minimum, meet the requirements provided in Table 12.

Table 12. Control of Nonconforming Products Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Control of Nonconforming Product (4.13) • *Evidence that provides information about: (1) the nature of the nonconforming product, (2) how the nonconformance will be addressed, and (3) the condition of the product*	• *Office of Public Affairs (Code P) specified in OWIs*	• *Office of Public Affairs (Code P) specified in OWIs*

4.13.2 Other Control of Nonconforming Products

Because key products developed at HQ are primarily represented in document format (see paragraph 3.2), product nonconformances identified do not warrant the application of the ISO 9001, 4.13, Control of Nonconforming Products, quality system element. Products shall be reviewed prior to release via the instructions provided in paragraph 4.9.4.

4.14 Correct and Prevent Quality System Problems

This paragraph documents conformance to the ISO 9001, 4.14, Corrective and Preventive Action, quality system element.

4.14.1 General

HCP1280-2, Corrective and Preventive Action, has been established and will be maintained at HQ to ensure consistent and effective methods for correction and prevention of recurrence of nonconformances. This is to ensure that nonconformances are corrected in the delivery of quality products to the customer. Any corrective or preventive action taken to eliminate the causes of actual or potential nonconformances shall be to a degree appropriate to the magnitude of problems and commensurate with the risks encountered. Any changes to the documented procedures as a result of corrective or preventive actions shall be recorded and implemented.

4.14.2 Corrective Action

Procedures have been established for the effective handling of customer concerns or complaints and reports of product nonconformances. (Refer to HCP1280-2, Corrective and Preventive Action.) Disciplined problem-solving methods shall be used during the investigation of the cause of the nonconformance. Results of the investigation and analysis shall be recorded (see paragraph 4.16 and Table 13). Procedures document corrective action needed to eliminate the cause of nonconformances and define corrective action follow-up activity to ensure that documented corrective action is taken and that it is effective.

4.14.3 Preventive Action

Procedures have been established for preventive action. Appropriate sources of information such as processes and work operations which affect product quality, audit results, quality records, and customer complaints to detect, analyze, and eliminate potential causes of nonconformances may be used. (Refer to HCP1280-2, Corrective and Preventive Action.) Steps needed to effectively deal with preventive action, shall be determined and initiated; controls shall be applied to ensure that preventive action is effective and all relative information shall be submitted to the Quality Council for review. Actions resulting from Quality Council meetings shall be deemed preventive actions for the Quality System. (See paragraph 4.1.3).

Table 13. Corrective and Preventive Action Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Corrective and Preventive Action System (CPAS) (4.14) • *Evidence documenting that : (1) customer complaints or internal problems are identified, (2) there is a record of the nonconformance, (3) a systemic analysis of the nonconformance was completed, and (4) the nonconformance has been addressed*	• *ISO 9001 Project Office through HCP 1280-2, Corrective and Preventive Action*	• *ISO 9001 Project Office* • *Any Headquarters Office: (1) whose employees have received a customer complaint or identified an internal problem and filed a Corrective Action (CA) Form or Quality System Deficiency Notice*

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
		(QSDN) or (2) receiving a CA Form, CA Report, Executive Management Representative Notice, or Nonconformance Report

4.15 Handle, Store, Package, Preserve, and Deliver Products

This paragraph documents conformance to the ISO 9001, 4.15, Handling, Storage, Packaging, Preservation and Delivery, quality system element.

4.15.1 NASA Arts and Exhibits Program Products

The HQ Office of Public Affairs (Code P) is the only organization within the scope of the HQ Quality System that requires handling, storage, packaging, preserving, and delivering of their products as addressed in the ISO 9001 standard. Code P manages the NASA Arts Program and the NASA Exhibits Program. Code P relies on contractors managed by the Office of HQ Operations (Code C) to provide these services as a part of their process. Process control (see paragraph 4.9) is maintained and records are kept by Code C through applicable support services contracts.

4.15.2 Other Products

Because key products developed at HQ are primarily represented in document format (see paragraph 3.2), they do not warrant the standard application of the ISO 9001, 4.15, Handling, Storage, Packaging, Preservation, and Delivery, quality system element. Therefore, this element is not applicable to the other products within the scope of HQ registration.

4.16 Control Quality Records

This paragraph documents conformance to the ISO 9001, 4.16, Control of Quality Records, quality system element.

The ISO 9001 standard requires that we maintain quality records of our management system. Quality records provide objective evidence that HQ products comply with specified requirements and that HQ processes are effective. There are many possible indicators that can demonstrate that products comply with requirements and that a process is effective. Minutes of meetings, telephone messages, annotations in day planners are examples of objectives evidence. However, all objective evidence need not be controlled as a quality record. The office of primary responsibility (OPR) shall determine which objective evidence needs to be controlled as a quality record to ensure that HQ products comply with requirements and to demonstrate the effective operation of the HQ Quality System. The identification of these quality records shall be made in

the applicable HCP and OWI, or other documents and in conjunction with the policies in the QSM.

All quality records identified shall be legible and stored in a way that they are readily retrievable in facilities that provide a suitable environment to prevent damage, deterioration, or loss. Records may be in the form of any type of media, such as hard copy or electronic media. The NASA Records Retention Schedule, NPG 1441.1, is the official procedure governing the retention, retirement, and destruction of Agency records. Process owners should use these schedules to determine the item and series that best fit their records. The template provided in HCP1400-1, Document and Data Control, section 7.0, establishes a baseline matrix to provide HQ codes a format for identifying quality records. Table 14 identifies the types of quality records within the HQ Quality System and the organizations responsible for collecting, indexing, accessing, filing, storing, maintaining and disposing of the records.

Table 14 . Quality Records

Type of Record	Responsible Organization(s)
Quality Council meeting records (see paragraph 4.1.3)	- ISO 9001 Project Office
Incoming Work Requirements records (see paragraph 4.3)	- HQ codes
Design records (see paragraph 4.4)	- HQ codes
Purchasing records (see paragraph 4.6)	- HQ codes
Process Records (see paragraph 4.9)	- HQ codes
Corrective/Preventive Action records (see paragraph 4.14) Quality System (General) Product/Process Specific - Identified by audit - Identified by Product/Process Owner	 - ISO 9001 Project Office - ISO 9001 Project Office - Product/Process Owner
Internal Audit records (see paragraph 4.17 below)	- ISO 9001 Project Office
Employee Training records (see paragraph 4.18 below) Training coordinated by HQ Human Resources Management Division On-the-job training (OJT forms)	 - Goddard Space Flight Center (GSFC) Office of Human Resources - HQ codes

Responsible organizations in Table 14 shall either have separate procedures for controlling quality records or shall identify the control of quality records within the OWI's. In addition, the organizations listed above shall be responsible for purging obsolete records as they are identified.

For each of the record types identified in Table 14, a corresponding table is provided in the appropriate paragraph of this QSM. These corresponding tables provide detailed

information regarding the content and/or description of quality records that are required to be maintained.

4.17 Conduct Quality System Internal Audits

This paragraph documents conformance to the ISO 9001, 4.17, Internal Quality Audits, quality system element.

Documented procedures have been established and shall be maintained at HQ for planning and implementing internal quality audits. (Refer to HCP1280-3, Internal Quality Audits.) HQ shall plan and perform internal audits on a scheduled basis, according to the status and importance of the activity to determine the effectiveness of the HQ Quality System. The results shall be documented and maintained as quality records (see paragraph 4.16) and distributed to the manager responsible for the affected organizations. Nonconformances identified shall be tracked to ensure that timely corrective action is taken by the manager of the affected area (see HCP1280-2, Corrective and Preventive Actions).

HQ activities shall be audited by personnel independent of the activity under review for compliance with documented procedures, plans, instructions, and accepted customer agreements and to determine the effectiveness of the HQ Quality System.

Follow-up audits shall be performed by HQ to verify and record the implementation and effectiveness of the corrective action taken and shall be maintained as quality records (see paragraph 4.16 and Table 15). Corrective action commitments, made in response to audit findings, will be assessed to ensure the implementation and effectiveness of the action.

The results of the HQ internal quality audits will form an integral part of the input to Quality Council activities (see paragraph 4.1.3).

Table 15. Internal Audit Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Internal Audits (4.17) • *Evidence documenting that: (1) internal quality audits were conducted as defined, (2) there is a record of nonconformances and observations, (3) the auditee received the audit results and (4) the auditee critiqued the internal audit*	• *ISO 9001 Project Office*	• *ISO 9001 Project Office*

4.18 Train Personnel

This paragraph documents conformance to the ISO 9001, 4.18, Training, quality system element.

Documented procedures have been established and shall be maintained at HQ that identify the training requirements and provide appropriate training of personnel performing services directly affecting quality. (Refer to HCP3410-4, Employee Training.) Personnel performing specific assigned tasks shall be qualified on the basis of appropriate education, training, and/or experience, as required. Appropriate training records shall be maintained as quality records (see paragraph 4.16 and Table 16).

Table 16. Training Quality Records

Quality Record Definition(s) – What Quality Records are Required by the Quality System?	Specifying Office(s) - Who Defines Them?	Responsible Office(s) – Who Maintains Them?
Employee Training (4.18) • *Evidence documenting that: (1) Training requirements have been identified and (2) records are maintained that training has been completed*	• *Office of Headquarters Operations (Code C*	• *GSFC Office of Human Resources* • *Headquarters Offices required to maintain OJT records*

4.19 Service Products

Because products developed at HQ are primarily documents (see paragraph 3.2), they do not warrant standard servicing or maintenance as intended by the ISO 9001, 4.19, Servicing, quality system element. As such, this ISO 9001 quality system element does not apply to the HQ Quality System.

4.20 Measure Performance

This paragraph documents conformance to the ISO 9001, 4.20, Statistical Techniques, quality system element.

4.20.1 Need for Statistics

The need for statistics to measure the performance of the Quality System has been identified at HQ in applicable OWI's and in the following activities:

- Quality Council Meetings - for statistical analysis of corrective actions, Quality System nonconformances, and trend analysis for preventive action items (see QSM paragraph 4.1.3),
- Quality System Problem Correction and Prevention - corrective action tracking and analysis (see QSM paragraph 4.14),
- Quality System Internal Audits - Quality System nonconformance analysis (see QSM paragraph 4.17).

4.20.2 Applications

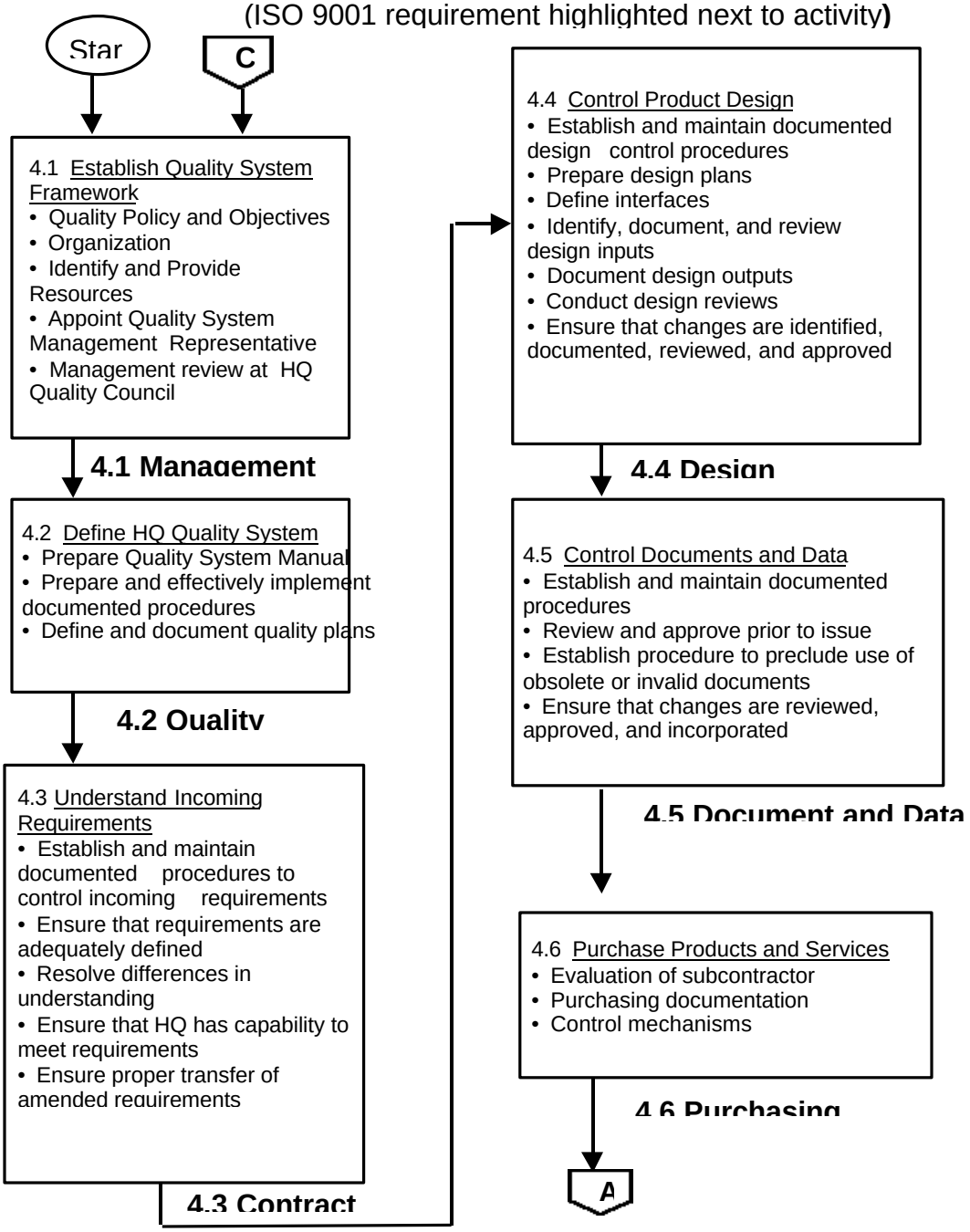
Applications for the implementation and control of statistical techniques shall be found within the applicable OWI or the following element procedures:

- Quality Council meetings HQPC 1150.1
- Corrective and Preventive Action HCP1280-2
- Internal Quality Audits HCP1280-3

Appendix A

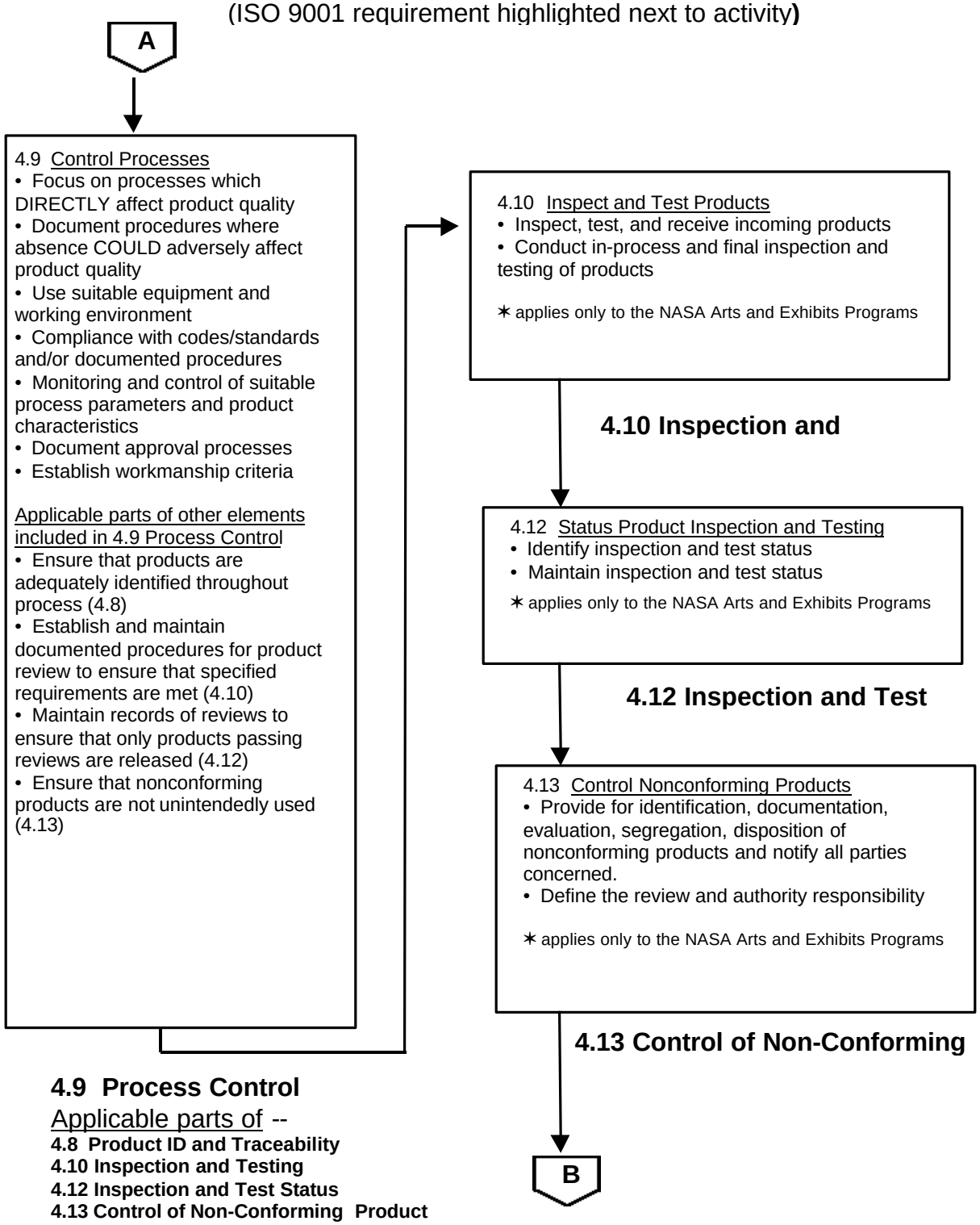
Headquarters Quality System Element Crosswalk

(ISO 9001 requirement highlighted next to activity)



Headquarters Quality System Element Crosswalk

(ISO 9001 requirement highlighted next to activity**)**

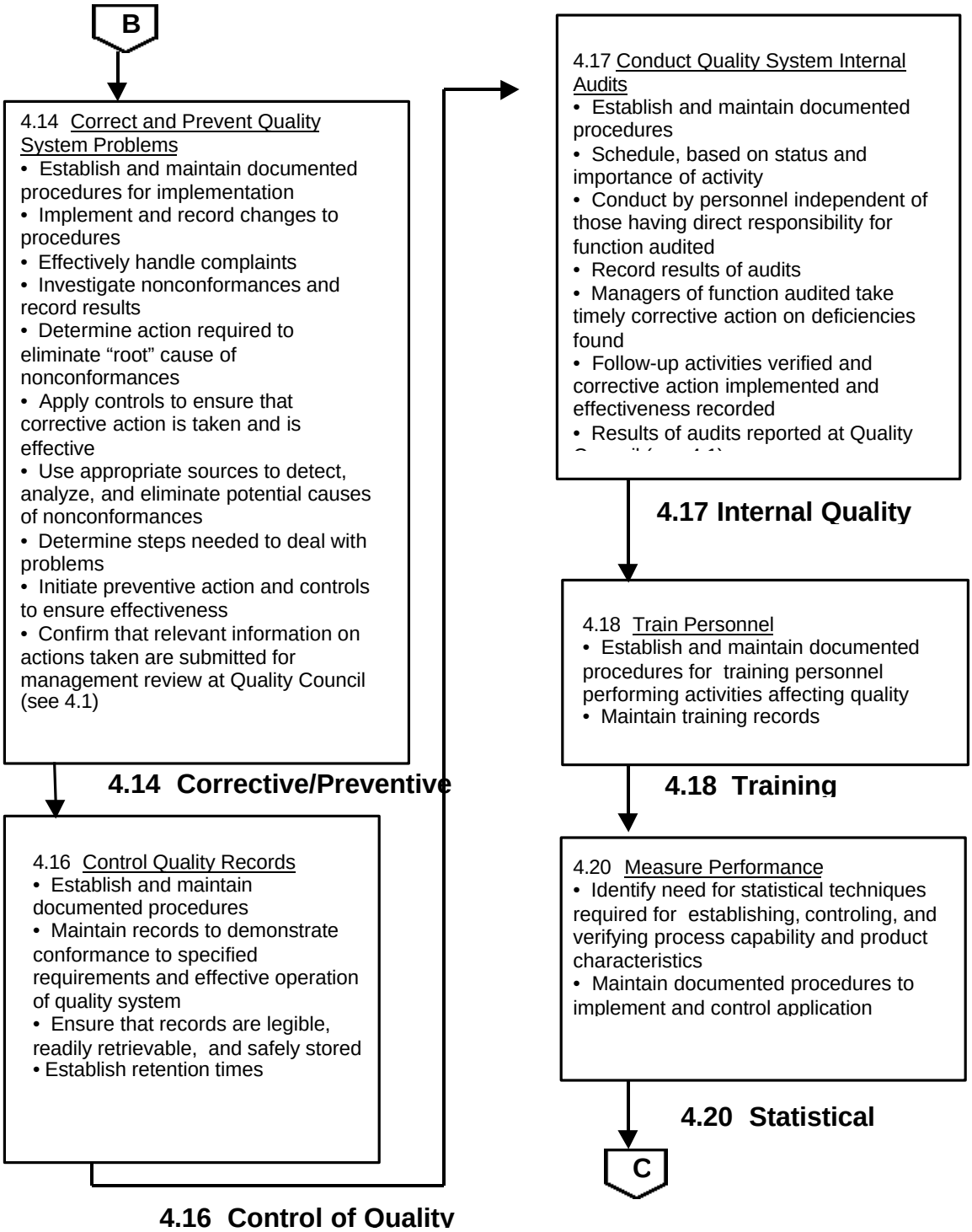


4.9 Process Control

Applicable parts of --

4.8 Product ID and Traceability
4.10 Inspection and Testing
4.12 Inspection and Test Status
4.13 Control of Non-Conforming Product

Headquarters Quality System Element Crosswalk
(ISO 9001 requirement highlighted next to activity)



Appendix B - QSM/OWI Matrix – NASA Headquarters

Quality System Documents	Quality System Manual Elements																		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Quality System Manual	X	X							X							X				X
Document & Data Control					X											X				
Corrective & Preventive Action														X			X			
Internal Quality Audits																	X			
Employee Training																		X		
Associate Deputy Administrator - Code AI (4)																				
Management of Capital Investment Council Meetings									X							X				
Management of Senior Management Council Meetings									X							X				
Management of Headquarters Quality Council Meetings									X							X				
Management of Integrated Financial Management Steering Council Meetings									X							X				
Chief Engineer - Code AE (3)																				
Lead and Manage PAPAC Process									X							X				
Manage Chief Engineer's Councils									X							X				
Manage Programs and Budget			X						X							X				
Chief Information Officer - Code AO (3)																				
Information Technology Policy Formulation Process									X							X				
Information Technology Capital Investment Development Process			X						X							X				
Management of Information Technology Architecture & Standards				X					X							X				
Chief Health and Medical Officer – Code AM (4)																				
Medical Policy Formulation Process									X							X				
Medicine of Extreme Environments									X							X				
Safe and Ethical Conduct of Human and Animal Research									X							X				
Occupational Health									X							X				
Chief Scientist - Code AS (2)																				
Develop and Integrate NASA Cross Enterprise Science Activities									X							X				
Management of NASA Science Council									X							X				
Chief Financial Officer - Code B (6)																				
Agency Financial Management Policy Formulation									X							X				
Budget & Performance Plan Formulation			X						X							X				
Budget Execution			X						X							X				
Annual Accountability Report Process									X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Performance Plan Update and Reporting			X						X							X				
Manage CFO Council Meetings									X							X				
Headquarters Operations - Code C (11)																				
HQ Policy Formulation and Approval									X							X				
MOA Process									X							X				
HQ Budget Formulation			X						X							X				
HQ Budget Execution			X						X							X				
Multicultural/Diversity Education									X							X				
Support Services Contract Management									X							X				
EO Pre-Complaint Process									X							X				
Facilities, Administration, Security Services									X							X				
Correspondence Management									X							X				
Recruitment									X							X				
Human Resources Services									X							X				
Equal Opportunity Programs - Code E (8)																				
Policy Formulation and Approval									X							X				
Budget Formulation and Execution			X						X							X				
Operational Budget Formulation and Approval			X						X							X				
Affirmative Employment Program Planning and Approval									X							X				
Accomplishment Reports Preparation and Approval									X							X				
Evaluation and Reporting									X							X				
OEOP Conference Selection and Implementation									X							X				
Solicitation Development, Proposal Peer Review, Selection, and Award Process									X							X				
Human Resources & Education - Code F (7)																				
Formulation, Analysis, and Implementation of Agencywide Training Policy									X							X				
Agency Policy Formulation and Approval									X							X				
Budget Formulation, Advocacy and Execution for NASA Education Program			X						X							X				
Agency Research & Program Management Budget Formulation			X						X							X				
Agency Research & Program Management Budget Execution			X						X							X				
NASA Education Program – Contracts and Grants									X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
NASA Education Program Data Collection and Evaluation System									X							X				
General Counsel - Code G (4)																				
Processing Legislative Proposals for Incorporation into the NASA Authorization Bill									X							X				
Representing NASA in Litigation									X							X				
Process to Evaluate Candidates to License NASA Technologies and Negotiate Licenses									X							X				
Rendering Legal Advice									X							X				
Procurement - Code H (4)																				
Develop and Publish Regulations and Guidance									X							X				
Develop and Implement Initiative									X							X				
Procurement Management Survey Process									X							X				
Review and Approve Documents									X							X				
External Relations -Code I (10)																				
Formulation and Approval of International Space Act Agreements									X							X				
Support of NASA Research Opportunities									X							X				
Approval Process for NASA Participants in NATO Research and Technology Org. Activities									X							X				
Obtain Diplomatic Clearance for NASA Research Aircraft and Scientific Balloon Campaigns									X							X				
Obtaining Export Licenses for NASA									X							X				
Organization and Support for Administrator Foreign Travel									X							X				
Foreign Official Travel Notifications									X							X				
Foreign National Visitor Requests									X							X				
Assignment/Extension of Military Detailees to NASA									X							X				
Recommendations for Military Decorations to Military Detailees to NASA									X							X				
Management Systems - Code J (10)																				
Policy Formulation Process									X							X				
Agreement Formulation Process									X							X				
Construction of Facilities Budget Formulation & Execution			X						X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Environmental Compliance & Restoration Budget Formulation & Execution			X						X							X				
Management Report Preparation									X							X				
Functional Oversight Process									X							X				
Agency Directives Management Process					X				X							X				
Audit Management Process									X							X				
Sensitive Compartmented Information Program Management Process									X							X				
Aircraft Acquisition and Disposal Process									X							X				
Small & Disadvantaged Business Utiliz. - Code K (4)																				
Policy Formulation									X							X				
Advocacy									X							X				
Outreach									X							X				
The Goaling Process									X							X				
Legislative Affairs - Code L (7)																				
Preparation of Initial NASA Operating Plan Submission to Congress									X							X				
Congressional Hearing Preparation									X							X				
Preparation of Congressional Briefings									X							X				
Responding to Congressional Correspondence									X							X				
Post-Hearing Activities									X							X				
Comments on Proposed Legislation									X							X				
Identification of & Response to Congressional Reporting Reqts.									X							X				
Space Flight - Code M (20)																				
HEDS Strategic Planning Process									X							X				
Policy Formulation and Dissemination Process									X							X				
External Directives Review									X							X				
Internal Directives Development									X							X				
Budget Formulation (Advocacy) Process			X						X							X				
Funds Control Process									X							X				
Congressional Support Process									X							X				
HEDS Exploration Technology Process									X							X				
Approval and Implementation of Outreach & Education Systems									X							X				
Space Operations Space Shuttle Req'ts and Assessment Process				X					X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Space Development Req't. Definition & Assessment				X					X							X				
Customer/Space Communications Req'ts Services Process									X							X				
ELV Manifest Process									X							X		X		
DoD Secondary Payloads Reimbursable Process			X						X							X				
Shuttle Payload Manifest Process									X							X				
Traffic Model Planning Process for ISS									X							X				
Spectrum Management/Regulatory Policy Process									X							X				
NASA/DoD GPS Coordination Process									X							X				
Space Data Systems Standard Services Process									X							X				
Correspondence and Action Tracking									X					X		X				
Public Affairs - Code P (10)																				
Determine Public Affairs Requirements for Products and Services									X							X				
Perform News Gathering, Encapsulation and Distribution									X							X				
Respond to Freedom of Information and Public Inquiries									X							X				
Plan/Conduct Guest Operations, Protocol, Special Events and Initiatives									X							X				
Coordinate Astronaut Appearances & Speakers Bureau									X							X				
Develop TV Programming									X							X				
Manage Art Program						X			X	X		X	X		X	X				
Manage Exhibits Program									X	X		X	X		X	X				
Protect Trademark and Corporate Identity									X							X				
Monitor and Adopt Emerging Technology									X							X				
Safety & Mission Assurance - Code Q (26)																				
Development and Utilization of Annual Operating Agreements									X							X				
OSMA Budget Execution			X						X							X				
OSMA Budget Reprogramming			X						X							X				
Issuance of Resources Authority to Centers			X						X							X				
ASAP Annual Report									X							X				
Safety Variances									X							X				
Manage SMA Process Verifications									X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Process Based Mission Assurance Process									X							X				
Perform Executive Secretary for HEDS Assurance Board									X							X				
Coordinating SMA Participation in the Shuttle CoFR Process									X							X				
Coordinating SMA Participation in the ISS CoFR Process									X							X				
Perform OSMA's SMA Insight/Oversight of ELV Launches									X							X				
Coordinate Nuclear Launch Safety Approval (NLSA) Process									X							X				
Manage NASA's Emergency Response									X							X				
OSMA Management of NSRS									X							X				
Manage Agency-wide ISO 9000 Lead Assessor/Auditor Training									X							X				
Manage QRAS CCB				X					X							X				
Administer QASAR Award Program									X							X				
Administer George M Low Award Program									X							X				
Appoint New ASAP Members									X							X				
Manage OSMA Support Contractor Task Orders									X							X				
Provide OSMA Input to JPL Award Fee									X							X				
Manage Emergency Operations Center									X							X				
Develop and Maintain SMA Requirements Documentation				X					X							X				
Develop and Maintain OSMA HOWIs					X				X							X				
Manage OSMA use of HATS									X							X				
Aerospace Technology - Code R (23)																				
Enterprise Strategic Planning				X					X							X				
Agency Policy Formulation & Approval									X							X				
Enterprise/IPO Policy Formulation									X							X				
Enterprise/IPO Budget Formulation			X						X							X				
Facility Investment Planning									X							X				
Enterprise Budget Execution			X						X							X				
HQ Operations Budget Development									X							X				
HQ Operations Budget Administration									X							X				
Advocacy, Outreach & External Communications									X							X				
Review of Interagency Agreements			X						X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Review of International Agreements									X							X				
Advisory Committee Management									X							X				
Program/Project Formulation & Approval									X							X				
Program Evaluation									X							X				
Enterprise/IPO Contingency Planning									X							X				
Review of Center Implementation Plans									X							X				
Performance Assessment & Investment Strategy									X							X				
IG/GAO Liaison									X							X				
Develop Technology Investment Portfolio									X							X				
Update NASA Technology Plan									X							X				
Maintain NASA Technology Inventory Database									X							X				
Advisory Committee Management									X							X				
Inventions and Contributions Board Staff Operations and Procedures									X							X				
NASA Software of the Year Competition Operations and Procedures									X							X				
Congressional Liaison									X							X				
Space Science - Code S (19)																				
Strategic Planning									X							X				
Budget Formulation			X						X							X				
Budget Justification			X						X							X				
Budget Implementation -- Operating Plan			X						X							X				
Budget Implementation – Cost Phasing Plan			X						X							X				
Develop or Update Program Commitment Agreement (PCA)									X							X				
Program Plan Development									X							X				
NASA Research Announcement (NRA) for R&A Investigations						X			X							X				
Announcement of Opportunity (AO) for Science Flight Missions						X			X							X				
Competing and Awarding Prime Contract for JPL Operations						X			X							X				
Evaluating, Approving, and Authorizing Award Fee on Prime Contract for JPL Operations						X			X							X				
JPL Direct Task Order Award						X			X							X				
JPL Reimbursable Task Order Award						X			X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Launch Preparation Activities									X							X				
Performance Planning									X							X				
Performance Assessment									X							X				
Program/Project Assessment									X							X				
Code SM Technology Development Monthly Review									X							X				
Tracking HATS Action Items Issued to the Associate Administrator for Space Science									X							X				
Life & Microgravity Sciences & Applications - Code U (15)																				
Enterprise Strategic Planning				X					X							X				
OLMSA General Policy Formulation				X					X							X				
Agency Occupational Health Policy Formulation				X					X							X				
OLMSA Medical Policy Formulation				X					X							X				
Budget Formulation			X						X							X				
Budget Implementation									X							X				
Outreach Material Preparation									X							X				
Inquiry Response									X							X				
Space Act Agreements									X							X				
Research Solicitation, Evaluation and Selection									X							X				
Commercial Space Center Definition and Selection									X							X				
Commercial Research Flight Planning									X							X				
Flight Requirements Planning and Integration									X							X				
Grants, Contracts & Interagency Agreements/Transfers Renewal									X							X				
Formulation & Approval of OWIs					X				X							X				
Earth Science - Code Y (12)																				
Develop Enterprise Strategy				X					X							X				
Formulate ESE Budget			X						X							X				
Execute ESE Budget			X						X							X				
Advocate ESE Budget			X						X							X				
Plan Science Research									X							X				
Formulate and Approve Flight Missions									X							X				
Solicit & Select Science, Applications & Education Investigations									X							X				
Formulate the ESE Technology Development Program									X							X				

Quality System Documents	Quality System Manual Elements																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Conduct Peer Review							■	■	X		■					X			■	
Obtain Approval for Release of Solicitation Instruments							■	■	X		■					X			■	
Oversee and Evaluate Enterprise Program							■	■	X		■					X			■	
Approve ESE Office Work Instructions					X		■	■	X		■					X			■	
Policy & Plans – Code Z (7)																				
NASA Strategic Plan				X			■	■	X		■					X			■	
NASA Policy Development							■	■	X		■					X			■	
Aeronautics and Space Report of the President							■	■	X		■					X			■	
NASA Historical Publications							■	■	X		■					X			■	
Advisory Committee Management				■			■	■	X		■					X			■	
NASA Advisory Council				■			■	■	X		■					X			■	
HQ Historical Reference Collection					■		■	■	X		■					X			■	

N/A to HQ Quality System	■
Addressed via Element 9	■

219 Total OWIs

REV: August, 2000